

ULTRA-SMALL HIGH-SPEED COAXIAL CABLE  
WITH DUAL FILAMENT INSULATOR

ABSTRACT

A cable for transmitting electromagnetic signals has a central conductor. A pair of insulator filaments, each having a circular cross section, are twisted around each other to form an insulator wrap. The insulator wrap is helically wound around the conductor. An insulator sheath, provided as an outer cover for the cable, surrounds the wrapped central conductor and is supported by the insulator wrap. Since the insulator sheath is offset from the conductor, an enclosed air space is formed between the sheath and the conductor in the spaces not occupied by the insulator wrap. The twist pitch of the filaments and the pitch of the wrap around the conductor can both be modified to adjust the amount of insulator material located in the air space and thereby the cable's effective dielectric constant, which effects the propagation speed of the electromagnetic signals carried by the cable.